Five Year Review Report

Alsco-Anaconda Superfund Site
Gnadenhutten, Ohio

Pursuant to CERCLA

Prepared By:

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Date

I. INTRODUCTION

A. Authority and Purpose

The United States Environmental Protection Agency (U.S. EPA), Region 5, conducted this statutory five-year review under Section 121© of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The purpose of a statutory five-year review is to evaluate whether a completed remedial action remains protective of human health and the environment at sites where hazardous waste remains on-site at levels that do not allow for unlimited use and unrestricted exposure. The Type Ia review conducted for this site is applicable to a site at which response is ongoing. This review will be placed in the Site files and local repository for the Alsco-Anaconda Superfund Site (the Site) in Gnadenhutten, Ohio.

B. Site History

The Alsco Anaconda site is located approximately 50 miles south of Akron, Ohio within the Gnadenhutten village limits. Gnadenhutten, a community of about 1,300 residents, is located within Clay Township in Tuscarawas County, along the floodplain of the Tuscarawas River. The site boundaries are the Penn-Central Railroad right-of-way, the AmeriMark manufacturing site, Anaconda Drive (County Road 39), and the Tuscarawas River on the northwest, northeast, southeast, and southwest, respectively. The approximately 4.8 acre site includes the areas formerly known as the settling basin (consisting of the northern and southern impoundments), the sludge pit, and the wooded area. The general vicinity of the site can be described as rural, characterized by farmland and sparse population. The nearest residence is southeast of the main plant, approximately 1,000 feet from the former source areas. Additional residences can be found along Anaconda Drive, past the railroad tracks and U.S. Route 36, and east of the AmeriMark Plant. Groundwater from the site flows to the southwest toward and into the Tuscarawas River, away from the municipal wells. These wells are located 0.5 miles upgradient of the Alsco Anaconda site, to the northeast (3 wells) and 0.5 miles to the east (1 well).

From 1965 to 1978, the site was used for the disposal of wastewater and wastewater treatment sludge that were generated by the production of aluminum products. The sludge was disposed of in two unlined lagoons and a sludge pit. From 1971 to 1978, the company disposed of the equivalent of approximately 18,000 drums of waste (on a mass basis, about 4,800 tons of waste). The lagoons and sludge pit contained contaminants such as cyanide, chromium, and polychlorinated biphenyls (PCBs), arsenic, cadmium, lead, mercury, and zinc. A wooded low-lying area near the

Tuscarawas River received overflow from the lagoons. The wastewater was discharged to the river. After 1978, sludge was disposed of in an off-site facility.

EPA conducted a preliminary assessment of the site in 1983 in an effort to identify and characterize the contamination. The results of the assessment indicated the site posed potential threats to human health and the environment through dermal contact with or ingestion of contaminated soil, sediment, ground water, and surface water, as well as through inhalation of airborne contaminated-particulate matter. These preliminary studies led the Atlantic Richfield Company (ARCO), one of the PRPs, to initiate a Remedial Investigation/Feasibility Study (RI/FS) in 1985. The site was eventually added to the final NPL list on June 10, 1986.

The site was divided into two (2) operable units after EPA rejected the groundwater report prepared by ARCO in 1989. The 2 operable units have been designated as the Source Material Operable Unit (SMOU) and the Groundwater Operable Unit (GWOU). Records of Decisions (RODs) were issued to the SMOU and GWOU on September 8, 1989 and September 28, 1992, respectively. To implement the selected remedies under the RODs, U.S. EPA issued unilateral administrative orders (UAOs) to the PRPs (ARCO and Harvard Industries) on December 28, 1989 for the SMOU after negotiations failed. A UAO to conduct GWOU remedial activities outlined in the ROD was issued June 23, 1993.

II. DISCUSSION

A. Remedial Objectives

SMOU - The remedial action objectives of the ROD for the SMOU were to address all possible contamination sources, including waste sludges and underlying soils. The remedy selected to meet these objectives included:

- Excavation of sludge contaminated with greater than 500 parts per million (ppm) of polychlorinated biphenyls (PCBs) and transportation off-site to a facility permitted to incinerate PCB waste;

- Excavation of remaining sludge and underlying soil, which included sludge contaminated with less than 500 ppm of PCBs, to levels meeting RCRA clean closure requirements. The material would then be sent for treatment and disposal to a facility in compliance with the CERCLA off-site policy or to a reclamation/reuse facility; and

- Backfill selected areas, and recontour and vegetate any excavated or cleared areas; maintain the present security fence; and record notice of the remedial action with the property deed.

Specific cleanup levels were developed in the Derivation of Cleanup Levels Document (DOCLD), a required design document. The selected remedy eliminates the principal threat posed by the site by removing the contaminated materials, thereby reducing the potential for exposure to cyanide, PCBs, chromium, and the other contaminants detected in site sludge and soils. To achieve this, the ROD required that all sludges and underlying soils be removed to a depth that prevents the ingestion of or direct contact with waste having a cumulative Hazard Index (HI) value of one for critical effect for noncarcinogens or having a $1X10^{-6}$ cumulative excess cancer risk from carcinogens, and prevents contribution to further ground water contamination to in excess of Maximum Contaminant Levels (MCLs).

The final RD Report (entitled SMOU Closure Project Manual) was submitted on July 31, 1991. The RA contract was awarded on November 22, 1991. A final Remedial Action Plan, prepared by the selected RA contractor, Westinghouse Remediation Services, Inc., was submitted on February 28, 1992.

GWOU - The remedial action objectives of the ROD for the GWOU were to address the contaminated on- and off-property ground water at the Site. The underlying premise was that the chosen remedy for the SMOU would result in clean closure of the site by removing the source of ground water contamination. The remedy selected to meet these objectives included:

- Natural flushing and attenuation of contaminants in the aquifer allowing ground water to discharge to the Tuscarawas River;

- Sampling and laboratory analysis of the ground water from monitoring wells;

- Installation of background wells, and sampling of those wells;

- Institutional controls, including deed restrictions, that prevent installation of drinking water wells within the Site boundaries until remedial action levels for ground water have been achieved; and

- Sampling of Tuscarawas River sediments and benthic organisms.

Ground water is to be monitored until cleanup standards are met.

Cleanup standards are risk-based as follows: Concentrations of site-related contaminants that also appear in background wells shall be reduced to their respective background concentrations, unless one of the following conditions results in a higher cleanup concentration. In no case shall contaminant concentrations be required to be reduced to levels below background concentrations. Site-related contaminants with an existing MCL shall be reduced to a concentration at or below the MCL. Carcinogenic site-related contaminants shall be reduced to levels that pose a cumulative carcinogenic risk of no greater than $1X10^{-6}$. Concentrations of noncarcinogenic site-related contaminants shall be reduced to levels that pose a cumulative HI no greater than one for any specific toxicological category.

B. Remedial Action

Operable Unit I - SMOU

The PRP, under U.S. EPA and OEPA oversight, began RA construction for the SMOU on March 18, 1992. Activities included excavation of the waste sludge and affected underlying soil from the northern and southern impoundments and the sludge pit (this material did not contain PCBs at levels above 50 ppm), conditioning the material, and transporting it off-site to the Peoria Disposal Company in Peoria, Illinois, a RCRA-permitted facility.

Excavation of the "hot" PCB material (e.g., material containing greater than 500 ppm PCBs) from the wooded area was completed, and the material was transported to Aptus, Inc., in Coffeyville, Kansas, and incinerated. The remaining wooded area F019 material, which was impacted with PCBs at levels from 50 to 500 ppm PCBs, was sent to a RCRA/TSCA facility, the Chemical Waste Management Landfill in Model City, New York. Debris and non-hazardous materials were sent to the Suburban RDF Landfill in Brownsville, Ohio.

During excavation, air quality was monitored and dust suppression measures were taken. Confirmation samples were also taken as work progressed to ensure that cleanup levels had been met. As areas were confirmed clean, backfilling and regrading of clean areas of the site took place.

In the course of conducting the remedial action, it was found that the extent of contamination was much greater than had been anticipated in the ROD. Also, contamination different from what was expected was found (e.g., material contaminated with volatile organic compounds, often referred to in site documents as "black

material," as well as buried drums). Excavation of contaminated materials continued until December 1992, at which point ARCO stopped work.

The discovery of additional contamination described above resulted in ARCO conducting a Supplemental Investigation (SI) from September through December of 1993. Activities related to the SI included undertaking further characterization of the waste and conducting additional sampling of the drums uncovered and/or generated in the 1992 remedial activities. Also, further studies as to the extent of remaining contamination were conducted by ARCO from September 12 through November 13, 1993. The SI Report describing the study results was first presented to the Agencies on March 17, 1994.

The results of the SI described above were then incorporated into the Assessment of Remaining Risk (ARR) Report (April 8, 1994, and subsequent revisions; the final version was approved on April 29, 1996). The purpose of the ARR Report was to determine how much additional excavation was required to meet the risk-based cleanup requirements of the ROD and the UAO. Areas which had to be excavated included those areas that exceeded site cleanup levels, areas containing drums, and areas containing F019 sludge.

The plans outlining the additional remedial work to be done, including the document entitled Supplemental Closure Plan, 1995 SMOU Remedial Activities, were first submitted to the Agencies on June 9, 1995. On July 27, 1995, U.S. EPA approved of ARCO's recommendations for the remaining excavation required for the SMOU (Note: ARCO's report was revised to incorporate Agency comments, and the final report was approved on April 29, 1996). ARCO conducted this excavation and related work at the site between July 17, and September 21, 1995. Remedial activities undertaken in 1995 included excavation of three areas east of the SMOU, five areas within the SMOU, and much of the ARAN area. Additional backfilling and regrading of the site also took place in 1995. In June 1996, an Explanation of Significant Differences (ESD), documenting the volume increases and discovery of "black material" and buried drums, was published.

Operable Unit II - GWOU

The RA for the GWOU could not begin until the contaminated source material had been removed, since it was not practical to install wells which might need to be abandoned during the additional SMOU excavation activities. Monitoring well installation activities were conducted from August 21, 1995, through September 13, 1995. Activities involved in the GWOU RA included installation of 6

shallow and 5 intermediate depth monitoring wells, 2 shallow and 1 intermediate depth background wells, abandonment of 3 existing monitoring wells, establishment of a bench mark to measure river levels, surveying of the well locations, and development of the wells.

III. RECOMMENDATIONS

I recommend the continued operation of the groundwater monitoring program until groundwater clean-up standards for contaminants of concern have been achieved at the Site. Results of quarterly groundwater surveys conducted by the PRPs since late 1995 indicate that several inorganic analytes (metals and cyanides) are above the established maximum contaminant levels (MCL's) for drinking water, both in upgradient and downgradient wells. The presence of these elevated levels of contaminants of concern clearly document that prescribed clean-up levels for this site have not been achieved and, thus, necessitate the need for continued monitoring. Consistent with the language in the UAO, the PRPs will be responsible for conducting periodic groundwater surveys, with oversight from U.S. EPA. OEPA will provide technical assistance to U.S. EPA when appropriate.

IV. STATEMENT ON PROTECTIVENESS

I certify that the remedies selected for this site remain protective of human health and the environment.

V. NEXT FIVE-YEAR REVIEW

The next five-year review will be completed by March 18, 2002, which is 10 years from the date on-site construction mobilization occurred for the SMOU at the Site (March 18, 1992).